

Serial No.: 09/648,044  
Docket No.: MIO0054PA/40509.90

Remarks

Claims 1, 3, 12, 45, and 47 have been amended. Support for the amendments to the claims is provided for in the specification and figure drawings. No new matter has been added. Accordingly, claims 1-14, and 45-57 are pending in the application.

Claims 45, 47, 49-51 and 55 are rejected under 35 USC 102(b) as being anticipated by, or in the alternative under 35 USC 103(a) as being unpatentable over Wieczorek et al (US 6,352,885). Claims 1, 3, 5-7, and 56 under 35 USC 102(b) as being anticipated by, or in the alternative, under 35 USC 103(a) as being obvious over Wieczorek et al. Claims 2, 4, 8-9, 48 and 52-53 are rejected as being unpatentable over Wieczorek et al in view of Akram (WO 99/31732). Claims 10 and 54 are rejected as being unpatentable over Wieczorek et al in view of Admitted Prior Art (APA). Claims 11-12, 14 and 57 are rejected as being unpatentable over Wieczorek et al in view of Motoyoshi et al (JP 6-53492). Claim 13 is rejected as being unpatentable over Wieczorek et al and Motoyoshi et al as applied to claim 12, and further in view of Akram.

Independent Claims 1, 3, 12, 45, and 47 have been amended to recited a feature neither disclosed nor suggested by the applied cited art. Applicants note that Wieczorek et al. fail to teach or suggest providing the entire gate oxide layer with a uniformed layer thickness. In particular, Wieczorek et al. teach away from having a uniformed gate oxide thickness as they explicitly teach filling gap 120 under the gate electrode 104 with the screen oxide material 125. This results in "the gate insulation layer 105 having an increased thickness compared to the initially formed thickness of the gate insulation layer 105. That is, the gate insulation layer 105 may be considered to have a middle region 140 and an edge region 141 in which the edge region

Serial No.: 09/648,044  
Docket No.: MIO0054PA/40509.90

141 is thicker than the middle region 140." Col. 5, lines 33-41. See also FIGS. 2C, 2D, and 2E. Accordingly, independent claims 1, 3, 12, 45 and 47 have been amended to recite the limitation of the entire oxide layer having a substantially uniform thickness. Accordingly, the anticipatory rejections and, in the alternative, the obviousness rejections in view of Wieczorek have been overcome.

In regards to the remaining obviousness rejections, Applicants note that combining the teachings of Wieczorek et al. and Akram would fail to produce the recited invention of amended independent claims 1, 3, 12, and 47. Akram is cited for using fluorine as a dopant. Accordingly, the combination of Wieczorek et al. and Akram would result in a gate oxide layer with non-uniformed thickness under the gate electrode and being doped with fluorine. Accordingly, as independent claims 1, 3, 12, and 47 as amended are unobvious in view of combined teachings of Wieczorek et al. and Akram, their dependent claims 2, 4, 8-9, 48, and 52-53 are also unobvious.

The Admitted Prior Art is cited for teaching a stack gate electrode, and thus fails to cure the above noted deficiency to Wieczorek et al. Accordingly, the combined teachings of Wieczorek et al and the APA would fail to produce the recited invention of amended claims 3, 12, 45 and 47, and thus claims 10 and 54 which depend therefrom are also unobvious.

Motoyoshi et al. is cited for using a transistor having a gate oxide comprising fluorine in a CMOS configuration, and thus fail to cure the above noted deficiency to Wieczorek et al. Accordingly, the combined teachings of Wieczorek et al and Motoyoshi et al. would fail to produce the recited invention of amended claims 3, 12, 45 and 47, and thus claims 10 and 54 which depend therefrom are also unobvious.

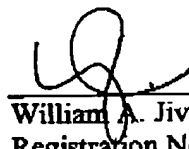
Serial No.: 09/648,044  
Docket No.: MIO0054PA/40509.90

The remaining rejections in the Office Action made final are noted by the Applicants but are believed moot in view of the above amendments and remarks. Accordingly, Applicants assert that independent claims 1, 3, 12, 45, and 47, and the claims that depend therefrom, as amended are patentable over the cited prior art and, therefore, respectfully requests that the anticipation and obviousness rejections to the claims be withdrawn.

The Applicants respectfully submit that, in view of the above amendments and remarks, the application is now in condition for allowance. The Examiner is encouraged to contact the undersigned to resolve efficiently any formal matters or to discuss any aspects of the application or of this response. Otherwise, early notification of allowable subject matter is respectfully solicited.

Respectfully submitted,  
DINSMORE & SHOHL LLP

By



William A. Jividen  
Registration No. 42,695

One Dayton Centre  
One South Main Street, Suite 1300  
Dayton, Ohio 45402-2023  
Telephone: (937) 449-6448  
Facsimile: (937) 223-0724  
e-mail: [william.jividen@dinslaw.com](mailto:william.jividen@dinslaw.com)  
WAJ/kec